

1 Claims

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3 1. A downhole tool for collecting and retrieving junk from
4 a well bore, the tool comprising a cylindrical body
5 attachable in a work string, a multi-faceted surface
6 arranged at an end of the body for contacting with and
7 breaking up junk and a plurality of inlet ports through
8 which the broken up junk passes into a trap for
9 collection.

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11 2. A downhole tool as claimed in Claim 1 wherein the
12 multi-faceted surface comprises a plurality of
13 projections, each projection being located between
14 adjacent inlet ports.

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16 3. A downhole tool as claimed in Claim 2 wherein the
17 projections each include a plurality of tungsten
18 carbide coated surfaces.

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20 4. A downhole tool as claimed in any preceding Claim
21 wherein the tool further includes a sleeve located
22 around the body, the sleeve including filter means for
23 filtering debris from fluid passing there through.

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25 5. A downhole tool as claimed in Claim 4 wherein a trap is
26 provided in an annular space between the body and the
27 sleeve.

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29 6. A downhole tool as claimed in any preceding Claim
30 wherein the ports have a flow path parallel to a
31 longitudinal axis of the tool.

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1 7. A downhole tool as claimed in any preceding Claim
2 wherein each inlet port includes a valve.

3 8. A downhole tool as claimed in any one of Claims 4 to 7
4 wherein the tool includes a throat, the throat being
5 located adjacent to the projections and having a
6 diameter narrower than a diameter of the sleeve.

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8 9. A downhole tool as claimed in any preceding Claim
9 wherein the cylindrical body includes an axial bore to
10 permit fluid flow through the work string.

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12 10. A downhole tool as claimed in Claim 8 wherein the
13 tool includes one or more milling elements located
14 adjacent the throat and distal to the inlet ports.

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16 11. A method of collecting and retrieving junk within a
17 well bore, comprising the steps:

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19 (e) providing a multi-faceted contact surface on a work
20 string, the surface including a plurality of inlet
21 ports;

22 (f) breaking up large pieces of junk by contact with the
23 surface;

24 (g) collecting the broken-up junk through the inlet
25 ports; and

26 (h) storing the broken-up junk in a trap adjacent the
27 inlet ports.

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29 12. A method as claimed in Claim 11 wherein the method
30 may include the steps of providing a mill ahead of the
31 surface and jetting milled junk from the mill towards
32 the inlet ports.

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- 1 13. A method as claimed in Claim 11 or Claim 12 wherein
2 the method includes the step of operating one or more
3 valves at each inlet port to prevent the broken-up junk
4 from exiting the trap.